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EXAMINER	
TRIEU, THAI BA	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,068	TURNER, JAMES WILLIAM GRIFFITH	
	Examiner	Art Unit	
	THAI BA TRIEU	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,15,16,26 and 29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,15,16,26 and 29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 October 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 November 2009 has been entered.

Claim 31 was newly added.

Drawings

The Amendment to drawings received on 10/21/2009 is accepted.

Specification

The Amendment to Specification submitted on 10/21/2009 is accepted.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are:

An actuator mechanism/means which opens and closes the exhaust valves;

An electronic controller which receives changes in engine speed as inputs and controls the actuator mechanism/means to open and close the exhaust/inlet valves; and

An engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller.

Note that without the structural connectivity of the electronic controller, an engine speed sensor/detector and the exhaust/inlet valves, the exhaust/inlet valves do not perform their functions of opening/closing, or adjusting, or restricting, or varying the flow rate of the exhaust gas to be delivered into the first exhaust duct or the second exhaust duct with respect to the changes in engine speed.

Claims 2-4, 15-16, 26, and 29-30 are rejected by virtue of their dependence on claim 1.

2. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are:

An engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller.

Note that without the structural connectivity of the electronic controller, an engine speed sensor/detector and the bypass valve bypassing the compressor means, the bypass valve bypassing the compressor means does not perform its functions of opening/closing, or adjusting, or restricting, or varying the flow rate of the compressed air with respect to the changes in engine speed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A).

Takeshi Yamane discloses a turbocharged internal combustion engine (1) including:

a variable volume combustion chamber (2);

inlet valve means (20, 21) controlling flow of air into the combustion chamber (2);

exhaust valve means (22, 23) for controlling flow of combusted gases from the combustion chamber (2);

a fuel delivery means (Not Shown, Well-known components of the internal combustion engines) for delivering fuel into the air to be mixed therewith for combustion;

exhaust valve means (22, 23) for controlling flow of combusted gases from the combustion chamber (2); and

compressor means (5B, 6B) for compressing the air prior to admission of the air into the combustion chamber (2);

wherein the improvement in turbocharged internal combustion engine (1) comprises:

the exhaust valve means (22, 23) including at least a first exhaust valve (22) connected to a first exhaust duct (24) and at least a second exhaust valve (23) connected to a second exhaust duct (25) separate and independent from the first exhaust duct (24);

the compressor means (5B, 6B) including a first turbocharger (5A) and the first exhaust duct (24) being connected to the first turbocharger (5A) so that exhaust gases passing through the first exhaust duct (24) drive the first turbocharger (5A) to rotate;

the second exhaust duct (25) bypassing the first turbocharger (5, 5A) and the combusted gases flowing through the second exhaust duct (25) being exhausted without passing through the first turbocharger (5, 5A); and

the first and second exhaust valves (22, 23) being operable to control flow of the combusted gases leaving the combustion chamber (2) flow through each of the first and second exhaust ducts (24, 25);

the compressor means (5B, 6B) additionally including a second turbocharger (6, 6A, 6B) receiving charge air for compression by the second turbocharger (6, 6A, 6B);

wherein the first turbocharger (5, 5B, 5A) is a high pressure turbocharger and the first turbocharger (5, 5B, 5A) being configured to receive compressed air at a first pressure from the second turbocharger (6, 6B, 6A), the second turbocharger (6, 6B, 6A) being a low-pressure turbocharger, and the first turbocharger (5B) being configures to compress the compressed air from the second turbocharger to a second higher pressure;

combusted gases leaving the first turbocharger (5, 5B, 5A) after expansion in a turbine (5A) thereof being combined with the combusted gases flowing in the second exhaust duct (25) and then the combined flow of combusted gases driving the second turbocharger (6, 6B, 6A) to rotate;

all exhaust gases passing through the first exhaust gas duct flowing through the first turbocharger (5, 5B, 5A) prior to flowing the second turbocharger (6, 6B, 6A) (See Page 6, lines 1-8 and 12-19 of a translation copy);

(Re. 3) a first intercooler (10) through which air compressed in the second low pressure turbocharger (6, 6B, 6A) passes before reaching the first high pressure turbocharger (5, 5B, 5A) (See Figure 1-2 and 4, and Abstract); and

(Re. 15) the engine having a first combustion mode and a second combustion mode, fuel being mixed with air in the first combustion mode to produce homogenous mixture which is then ignited by homogeneous charge compression ignition and fuel being ignited by compression ignition in the combustion chamber in said second combustion mode.

Takeshi Yamane discloses the invention as recited above; however, Takeshi Yamane fails to disclose the opening and closing of the first exhaust valve and the second exhaust valve controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct being varied by variation of opening and closing of the first exhaust valve with changes in engine speed with changes in engine speed; and a catalytic converter and its location.

Yasuyuki Santo teaches that it is conventional in the supercharged internal combustion engine art, to utilize the opening and closing of the first exhaust valve (5) and the opening and closing of the second exhaust valve (4) controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct (9) to the first turbocharger (12) relative to the second exhaust duct (8) being varied by variation of opening and closing of the first exhaust valve (5) with changes in engine speed (See Claim, lines 1-6; Page 3, lines 17-34, and Page 4, lines 7-16) ; and a catalytic converter

(15) receiving combusted gases leaving the second turbocharger then to atmosphere (See Figure 1).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the opening and closing of the first exhaust valve and the second exhaust valve controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct being varied by variation of opening and closing of the first exhaust valve with changes in engine speed with changes in engine speed; and a catalytic converter and its location, as taught by Yasuyuki Santo, to optimize the exhaust gas to rise to the maximum supercharging pressure of the high pressure turbocharger with almost no time lag and to reduce exhaust emissions for the Takeshi Yamane device.

Note that:

1. The recitation of "fuel being mixed with air in the first combustion mode to produce homogenous mixture which is then ignited by homogeneous charge compression ignition and fuel being ignited by compression ignition in the combustion chamber in said second combustion mode" is considered as the functional language. Takashi Yamane discloses all the structural components of an engine system, which are read on those of the instant invention. Therefore, the Takashi Yamane system is capable of performing the same desired functions as the instant invention having been claimed in claim 15.

2. As being disclosed on page 3, lines 17-20, The exhaust valve (5) of Santo only operates in the region other than the low speed region, which means that the exhaust valve (5) operates/opens at either normal speed or high speed and stops/closes at low speed.

3. The opening and closing of the first exhaust valve and the second exhaust valve of the instant application do not perform theirs function as controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct being varied by variation of opening and closing of the first exhaust valve with changes in engine speed with changes in engine speed, which is claimed in claim 1, since there is no structural connectivity of the controller, the engine speed sensor/detector, and these valves in order that the valve(s) are to be controlled with the changes in engine speed (emphasis added).

Claims 4, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A), and further in view of Yuji Hirabayashi (Patent Number JP 61-277818 A).

The modified Takeshi Yamane device discloses the invention as recited above, and further discloses the compressor means comprising additionally an intercooler (10) for cooling the compressor intake air prior to delivery of the air into the combustion chamber (2) (See Figures 1-2 and 4);

wherein the fuel delivery means (Not Shown, Well-known components of the internal combustion engines) is operative to deliver fuel into the combustion chamber (2) early enough in an upstroke for mixing of the fuel with air to produce a homogeneous mixture which is then ignited by homogenous charge compression ignition and wherein the fuel delivery means (Not Shown, Well-known components of the internal combustion engines) is operative to deliver fuel later in the upstroke for compression ignition in the combustion chamber.

However, the modified Takeshi Yamane device fails to disclose an intake air bypass passage having a bypass valve.

Hirabayashi teaches that it is conventional in the art of multistage type turbo-supercharged internal combustion engines, to utilize a bypass passage (from 5 to 18) having a bypass valve (7) controlling flow of air through the bypass passage and air compressed by the second turbocharger (2, 9) flows through the intake air bypass passage to the intake air passage to the inlet valve means by bypassing the first high pressure turbocharger (See Figures 1-2, Abstract).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a bypass passage having a bypass valve, as taught by Hirabayashi, to improve the efficiency of the modified Takeshi Yamane device, since the use thereof would have control the compressed intake air to be delivered into the engine based on the operating condition of the engine.

Note that the recitation of "wherein the fuel delivery means being operative to deliver fuel into the combustion chamber early enough in an upstroke for mixing of the fuel with air to produce a homogeneous mixture which is then ignited by homogenous charge compression ignition and wherein the fuel delivery means being operative to deliver fuel later in the upstroke for compression ignition in the combustion chamber" is considered as the functional language. Takashi Yamane discloses all the structural components of an engine system, which are read on those of the instant invention. Therefore, the modified Takashi Yamane system is capable of performing the same desired functions as the instant invention having been claimed in claim 29.

Additionally, when a claim includes a 'whereby" clause or similar clause, it must contain, in order to be complete, an enumeration of sufficient elements to perform the function so specified in such clause. A "whereby' clause is not objectionable. It merely states the result and adds nothing to the patentability of a claim (Israel v. Cresswell, 76 USPQ 594; In re Boileau, 1948 C. D. 83).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A), and further in view of either Lovell (Patent Number 3,202,141) or Gray (Patent Number 6,550,430 B2).

The modified Takeshi Yamane device discloses the invention as recited above; however, the modified Takeshi Yamane device fails to disclose the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition.

Lovell/Gray teaches that it is conventional in the art of operating compression ignition engine, to utilize in part loading operating conditions of the engine, the exhaust valve means being closed during the upstroke of the piston in order to trap combusted gases in the combustion chamber, the trapped combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition (Column 3, lines 27-54, Column 7, lines 74-75, and Column 8, lines 1-8 of Lovell; Column 2, lines 25-45, Column 3, lines 62-67, Column 4, lines 1-21, Column 6, lines 59-67, Column 7, lines 1-4 and 27-42, Column 13, lines 25-67, Column 14, lines 36-53, Column 15, lines 4-10 and 32-51 of Gray).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition, to improve the efficiency of the modified Takeshi Yamane device, since the use thereof would have controlled the desired air-fuel ratio for operating the engines.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A) and Yuji Hirabayashi (Patent Number JP 61-277818 A), and further in view of either Lovell (Patent Number 3,202,141) or Gray (Patent Number 6,550,430 B2).

The modified Takeshi Yamane device discloses the invention as recited above; however, fails to disclose the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition.

Lovell/Gray teaches that it is conventional in the art of operating compression ignition engine, to utilize in part loading operating conditions of the engine, the exhaust valve means being closed during the upstroke of the piston in order to trap combusted gases in the combustion chamber, the trapped combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition (Column 3, lines 27-54, Column 7, lines 74-75, and Column 8, lines 1-8 of Lovell; Column 2, lines 25-45, Column 3, lines 62-67, Column 4, lines 1-21, Column 6, lines 59-67, Column 7, lines 1-4 and 27-42, Column 13, lines 25-67, Column 14, lines 36-53, Column 15, lines 4-10 and 32-51 of Gray).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the exhaust valve means being closed to trap

combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition, to improve the efficiency of the modified Takeshi Yamane device, since the use thereof would have controlled the desired air-fuel ratio for operating the engines.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A), and further in view of Baker (Patent Number 5,199,261).

Takeshi Yamane discloses a turbocharged internal combustion engine (1) including:

a variable volume combustion chamber (2);

inlet valve means (20, 21) controlling flow of air into the combustion chamber (2);

a fuel delivery means (Not Shown, Well-known compo0enets of the internal combustion engines) for delivering fuel into air to be mixed therewith for combustion, exhaust valve means for controlling flow of combusted gases from the combustion chamber (2); and

compressor means (5B, 6B) for compressing the air prior to admission of the air into the combustion chamber (2),

actuator means (Not Shown, Well-known compo0enets of the internal combustion engines) for opening and closing the exhaust valve means (22, 23), and

an electronic controller (Not Shown, Well-known compo0enets of the internal combustion engines) configured to control operation of the actuator means to thereby control opening and closing of the exhaust valve means (22, 23), wherein the improvement in the turbocharged internal combustion engine comprises:

the exhaust valve means (22, 23) including at least a first exhaust valve (22) connected to a first exhaust duct (24) and at least a second exhaust valve (23) connected to a second exhaust duct (25) separate and independent from the first exhaust duct (24);

the compressor means (5B, 6B) including a first turbocharger (5A) and the first exhaust duct (24) being connected to the first turbocharger (5A) so that exhaust gases passing through the first exhaust duct drive the first turbocharger (5, 5A) to rotate;

the second exhaust duct (25) bypassing the first turbocharger (5, 5A) and the combusted gases flowing through the second exhaust duct (25) being exhausted without passing through the first turbocharger (5, 5A); and

the first and second exhaust valves (22, 23) being operable to control flow of the combusted gases leaving the combustion chamber flow through each of the first and second exhaust ducts (24, 25);

the compressor means (5B, 6B) additionally including a second turbocharger (6, 6A, 6B) receiving charge air for compression by the second turbocharger (6, 6A, 6B) and supplying compressed air at a first pressure;

wherein the first turbocharger (5, 5B, 5A) is a high pressure turbocharger and the first turbocharger (5, 5B, 5A) being configured to receive a proportion of the

compressed air at a the first pressure from the second turbocharger (6, 6A, 6B), the second turbocharger (6, 6A, 6B) being a low pressure turbocharger, and the first turbocharger (5, 5B, 5A) being configured to compress the compressed air from the second turbocharger (6, 6A, 6B) to a second higher pressure;

the compressor means (5B, 6B) additionally including a bypass passage (8) having a bypass valve (9g, 9H), configured to receive a proportion of the compressed air at the first pressure from the second turbocharger (6, 6B, 6A), and supply the same to the combustion chamber without passing through the first turbocharger (5, 5B, 5A) (See Figure 7, Page 3, lines 16-20 of the fully certified English translation copy);

combusted gases leaving the first turbocharger (5, 5B, 5A) after expansion in a turbine (5A) thereof being combined with the combusted gases flowing in the second exhaust duct (25) and then the combined flow of combusted gases driving the second turbocharger (6, 6B, 6A) to rotate;

all exhaust gases passing through the first exhaust duct (24) flowing through the first turbocharger (5, 5B, 5A) prior to flowing through the second turbocharger (6, 6B, 6A) (See Page 6, lines 1-8 and 12-19 of the fully certified English translation copy).

Takeshi Yamane discloses the invention as recited above; however, Takeshi Yamane fails to disclose a bypass valve controlled by the electronic controller; the opening and closing of the first exhaust valve and the second exhaust valve controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct being varied by variation of

opening and closing of the first exhaust valve with changes in engine speed with changes in engine speed; and a catalytic converter and its location.

Yasuyuki Santo teaches that it is conventional in the supercharged internal combustion engine art, to utilize the opening and closing of the first exhaust valve (5) and the opening and closing of the second exhaust valve (4) controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct (9) to the first turbocharger (12) relative to the second exhaust duct (8) being varied by variation of opening and closing of the first exhaust valve (5) with changes in engine speed (See Claim, lines 1-6; Page 3, lines 17-34, and Page 4, lines 7-16) ; and a catalytic converter (15) receiving combusted gases leaving the second turbocharger then to atmosphere (See Figure 1).

Additionally, Baker teaches that it is conventional in the supercharged internal combustion engine art, to utilize a bypass valve (56) controlled by the electronic controller (54); and the bypass valve (56) controlling the proportion of the compressed air from the second turbocharger (34) received by the bypass passage (26) relative to the first turbocharger (30), the proportion being varied with changes in engine speed (See Figure 3, Column 2, lines 32-40, and Column 6, lines 1-25).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the opening and closing of the first exhaust valve and the second exhaust valve controlling the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct being varied by variation of opening and closing of the first exhaust valve

with changes in engine speed with changes in engine speed; and a catalytic converter and its location, as taught by Yasuyuki Santo, and the bypass valve controlled by electronic controller, as taught by Baker, to optimize the exhaust gas to rise to the maximum supercharging pressure of the high pressure turbocharger with almost no time lag and to reduce exhaust emissions for the Takeshi Yamane device.

Response to Arguments

Applicant's arguments filed on June 19, 2009 with respect to claims 1-4, 8, 15-16, 26, and 29-31 have been considered but are moot in view of the new ground(s) of rejection under 112, second Paragraph.

Applicant's arguments filed on June 19, 2009 have been fully considered but they are not persuasive. Accordingly claims 1-4, 8, 15-16, 26, and 29-31 are pending.

In response to applicant's arguments on page 10-13, applicant states that Santo teaches away from the instant invention as claimed in independent claim 1:

"wherein opening and closing of the first exhaust valve and opening and closing of the second exhaust valve controls the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct, and the proportion of the flow of exhaust gas which flows through the first exhaust duct relative to the second exhaust duct being varied by variation of opening and closing of the first exhaust valve with changes in engine speed."

The examiner respectfully disagrees.

On page 3, Santo discloses that:

"The present invention, in order to achieve the above objectives, is characterized in that, in an engine with a supercharger wherein a first exhaust valve (4) that is operated in the entire operating region and a second exhaust valve (5) that is operated in the operating region other than the low-speed region are provided in each cylinder (1), and along with a first exhaust-type supercharger (11) being provided that is driven by means of the exhaust flow from the first exhaust valve (4), a second exhaust-type supercharger (12) that is driven by means of the exhaust flow from the second exhaust valve is provided; an exhaust valve apparatus (35) with a variable lift function is provided that starts the drive of the second exhaust-type supercharger (12) by steadily opening the second exhaust valve (5) from the point in time at which the supercharging by means of the first exhaust-type supercharger (11) reaches its maximum supercharging pressure."

The above paragraph of Santo means that the first exhaust valve operated in the entire operating region (from low speed to high speed) and the second exhaust valve operated in normal speed region to high speed region (other than low speed region), which provides the proportion of the exhaust flow through the first exhaust duct to the first turbocharger relative of the second exhaust duct.

The proportion of the exhaust gas flow is varied by the opening and closing of the exhaust valve (5) of Santo as the engine speed changes (i.e. at low engine speed).

Note that:

A first exhaust valve of the ***instant application*** is read as a second exhaust valve (5) of **Santo**; and

A second exhaust valve of the ***instant application*** is read as a first exhaust valve (4) of **Santo**.

With regarding to the rejections of claims 4, 26, and 29, applicant asserts that claims 4, 26, and 29 depend upon claim 1, as being discussed above; therefore, Claims 4, 26, and 29 will stand or fall with the corresponding independent claim 1.

With regarding to the rejections of claim 16 and claim 30, applicant asserts that claim 16 and claim 30 depend upon claim 1, as being discussed above; therefore, will stand or fall with the corresponding independent claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI BA TRIEU whose telephone number is (571)272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
December 2, 2009

/Thai-Ba Trieu/
Primary Examiner
Art Unit 3748